Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

Claim 1 (Canceled)

Claim 2 (Currently amended): ~~A computer~~ An apparatus comprising computer hardware for use in generating paths for electrically conductive traces within a routing space comprising:

means for receiving computer readable information representing a proposed physical layout of a routing space of an electronics system including locations of a first electronic component, a second electronic component, and obstacles within said proposed physical layout;

means for creating an initial array of nodes within the proposed physical layout;

means for adjusting within said proposed physical layout said initial array of nodes, said means for adjusting including locating a particular number of nodes between a pair of said obstacles, said particular number corresponding to a maximum number of traces that can pass between said obstacles, each of said nodes positioned between said pair of said obstacles representing a possible location of one of said traces that can pass between said obstacles; and

means for creating a computer generated representation of a trace within said proposed physical layout of said routing space that connects the first electronic component to the second electronic component and passes between said pair of obstacles by selecting a path through said adjusted array of nodes, said trace comprising said path ~~resulting in creation of a trace that passes between said pair of obstacles in said proposed physical layout~~.

Claim 3 (Currently amended): The ~~computer~~ apparatus of claim 2, wherein said means for adjusting comprises means for determining said particular number of traces that may pass between said pair of obstacles.

Claims 4 and 5 (Canceled)

Claim 6 (Currently amended): The ~~computer~~ apparatus of claim 2, wherein said means for adjusting locates said particular number of nodes along a line segment between said pair of obstacles.

Claim 7 (Currently amended): The ~~computer~~ apparatus of claim 6, wherein said line segment is a shortest line segment between said pair of obstacles.

Claim 8 (Currently amended): The ~~computer~~ apparatus of claim 2, wherein said means for adjusting adjusts a location of each of at least one of said nodes in accordance with a proximity of said node to an object in said routing space.

Claim 9 (Currently amended): The ~~computer~~ apparatus of claim 2 further comprising means for linking said adjusted initial array of nodes.

Claim 10 (Currently amended): The ~~computer~~ apparatus of claim 9, wherein said means for linking creates a link between each node in said array and nodes within a predetermined proximity of said each node without crossing any of said links.

Claim 11 (Currently amended): The ~~computer~~ apparatus of claim 10, wherein said path traverses ones of said links.

Claim 12-17 (Canceled)

Claim 18 (Currently amended): ~~A computer~~ An apparatus comprising computer hardware for use in generating paths for electrically conductive traces within a routing space comprising:

means for receiving information representing a proposed physical layout of a routing space of an electronics system including locations of obstacles within said proposed physical layout;

means for creating an initial array of nodes within said proposed physical layout of said routing space;

means for applying forces to ones of said nodes, wherein a magnitude of one of said forces applied to one of said nodes is proportional to a proximity of said one of said nodes to one of said obstacles;

means for moving within said proposed physical layout each of said ones of said nodes in accordance with said force applied to said one of said nodes; and

means for creating a computer generated representation of a trace within said proposed physical layout of said routing space by selecting a path through said adjusted array of nodes, said trace comprising said path ~~resulting in creation of a trace that passes through at least one of said nodes moved by said means for moving~~.

Claims 19 and 20 (Canceled)

Claim 21 (Currently amended): The ~~computer~~ apparatus of claim 18, wherein said means for applying applies a plurality of forces to one of said nodes, wherein a magnitude of each of said plurality of forces corresponds to a proximity of said node to one of said plurality of obstacles; and

said means for moving moves one of said nodes in accordance with a vector sum of said plurality of forces applied to said one of said nodes.

Claims 22-43 (Canceled)

Claim 44 (Currently amended): The ~~computer~~ apparatus of claim 2, wherein said [[path]] computer generated representation of said trace is stored within said ~~computer~~ apparatus.

Claims 45-47 (Canceled)

Claim 48 (Currently amended): The ~~computer~~ apparatus of claim 18, wherein said [[path]] computer generated representation of said trace is stored within said ~~computer~~ apparatus.

Claims 49-54 (Canceled)

Claim 55 (Currently amended): The ~~computer~~ apparatus of claim 2, wherein said means for creating an initial array of nodes creates the initial array of nodes in a honeycombed pattern.

Claim 56 (Currently amended): The ~~computer~~ apparatus of claim 2, wherein said means for creating an initial array of nodes creates the initial array of nodes wherein a random location of at least one node is generated.

Claim 57 (Currently amended): The ~~computer~~ apparatus of claim 18, wherein said means for creating comprises means for selecting spacings of the initial array of nodes to form a honeycombed pattern.

Claim 58 (Currently amended): The ~~computer~~ apparatus of claim 18, wherein said means for creating comprises means for generating a random location for at least one node.

Claims 59-63 (Canceled)